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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/594,315 | 06/27/2007 | Lawrence C. Kennedy | 032968-0134 | 2098 |

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| EXAMINER | |
|---|---|
| DODD, RYAN P | |

| ART UNIT | PAPER NUMBER |
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| 3655 | |

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| 12/14/2011 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/594,315 | KENNEDY ET AL. | |
| | Examiner | Art Unit | |
| | RYAN DODD | 3655 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *14 November 2011*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

5)☒ Claim(s) *1-9, 49-54, 62-65, and 72* is/are pending in the application.

5a) Of the above claim(s) *62-65* is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-9,49-54 and 72* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

10)☐ The specification is objected to by the Examiner.

11)☒ The drawing(s) filed on *6/7/2011* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

12)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

This action is in response to the amendment received 14 November 2011. Amendments to the Claims and Drawings, along with Remarks have been received, entered, and are being considered by Examiner. Claims 1-9, 49-54, 62-65, and 72 are currently pending, with claims 62-65 being withdrawn from consideration. Therefore **claims 1-9, 49-54, and 72 are** currently being considered.

### *Election/Restrictions*

Claims 62-65 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Species, there being no allowable generic or linking claim. Election was made without traverse in the reply filed on 27 April 2010. (See also MPEP § 818.03(a)).

### *Response to Amendment*

Applicant's drawings amendments of 7 June 2011 have been entered with deference to the Remarks of 14 November 2011. It is now Examiner's understanding that the letter "W" is a shifty character that may take various forms, including having rounded as well as pointed edges. On a side note, both the “W” and “U” probably ultimately originate from a character with pointed edges because carvings predate writing on paper and it is very difficult to inscribe curved edges when carving.

### *Claim Objections*

Claim 1 is objected to because of the following informalities: In line 7, "groove portion" should be "grooved portion". Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

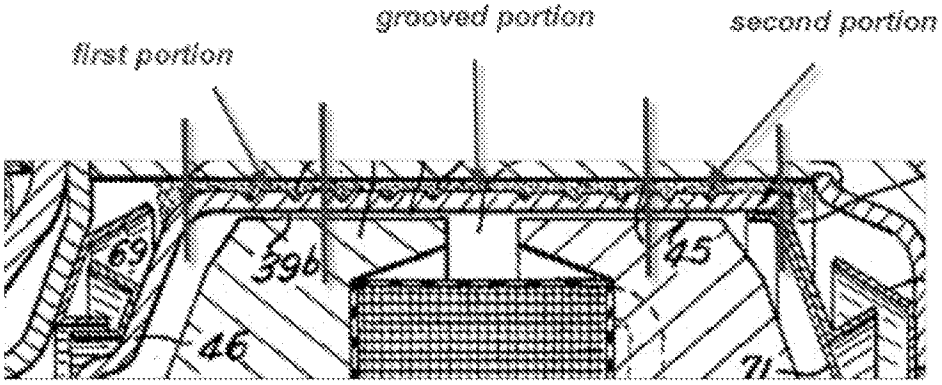
**Claims 1-2, 4-6, 49-52, 54, and 72** are rejected under 35 U.S.C. 102(b) as being anticipated by newly cited US Patent to Monroe 3176809 (henceforth Monroe '809).

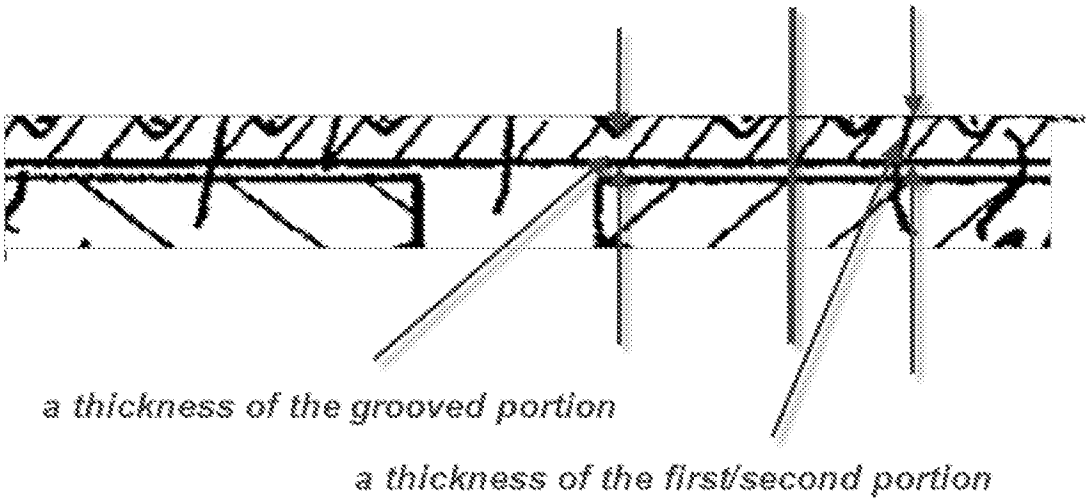
Monroe '809 discloses, referring to Fig. 1, a viscous fluid clutch for use in a vehicle comprising:

- a rotor (rotor 20) having a rotor hub (46) driven by an input shaft (input 21) and a rotor surface having an end connected to an outer periphery of the rotor hub,
- the rotor surface including: a first portion; a second portion; and a grooved portion disposed between the first and second portions (Fig. below);
- wherein the first portion, the second portion, and the groove portion are formed by a single piece,
- wherein the grooved portion forms a W-shaped profile (the grooved portion shown below and in Fig. 1 forms at least two W-shaped profiles),

- wherein the first and second portions of the rotor each have a thickness sufficiently greater than a thickness of the grooved portion (See Fig. below) such that a magnetic flux path in the fluid clutch will have a substantial portion of a magnetic field flow around the grooved portion as compared to a portion of the magnetic field flow that flows through the grooved portion.

In Monroe, the grooved portion has a thickness that appears to be about half as thick as a thickness of the first and second portions, which makes the thickness of the first and second portions in question sufficiently greater, even substantially greater than a thickness of the grooved portion.






**As to claims 2 and 52,** Monroe '809 discloses a magnetorheological fluid clutch, comprising:

- an input shaft (21);
- a coil assembly (34) for generating a magnetic field;
- a housing comprising a stator (19 or 44); and
- a rotor (20) disposed in the housing;
- wherein the rotor includes a radially extending hub (46) driven by the input shaft and an annular rotor ring connected to the hub; and
- wherein the rotor ring includes a first portion, a second portion, and a portion of reduced thickness (same as above analysis) disposed between the first and second portions to prevent a shunt in the magnetic field,
- wherein the rotor includes a grooved portion (same as above analysis) which forms a W-shaped profile at the portion of reduced thickness,

- wherein the first portion, the second portion, and the portion of reduced thickness areformed by a single piece.

As to **claims 4 and 5**, Monroe '809 discloses: wherein the portion of reduced thickness is formed to include grooves and protrusions which form the W shaped profile.

**As to claim 6 and 54**, in accordance to MPEP 2113, the method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight. Please note that even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product, i.e. the portion of reduced thickness, does not depend on its method of production, i.e. formed without cutting. ***In re Thorpe, 227 USPQ 964, 966 (Federal Circuit 1985).***

As to **claims 49 and 53**, Monroe '809 discloses the fluid clutch and its elements but does not disclose a "roll-formed portion". However, in accordance to MPEP 2113, the method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight. Please note that even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product, i.e. the portion of reduced thickness, does not depend on its method of

production, i.e. formed without cutting. ***In re Thorpe, 227 USPQ 964, 966 (Federal Circuit 1985).***

As to **claim 50,** Monroe '809 discloses a saw tooth shaped profile..

As to **claim 51,** Monroe '809 discloses a W-W shaped profile because it exhibits multiple "W's".

As to **claim 72**, the grooved portion of Monroe '809 has an inner surface and an outer surface, which are part of the rotor.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

**Claims 3, 7-8 and 53** are rejected under 35 U.S.C. 103(a) as being unpatentable over Monroe '809 alone.

As to **claims 3 and 53**, Monroe '809 discloses the magnetorheological fluid clutch of claim 2 but **does not disclose** wherein the thickness of the first portion and the thickness of the second portion are at least seven times greater than the thickness of the portion of reduced thickness. However, It would have been obvious to one having ordinary skill in the art at the time the invention was made to reduce the thickness of the portion of reduced thickness to a very small amount, since it has been held that where

the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller,* 105 USPQ 233.

As to **Claims 7-8**, Monroe '809 discloses the magnetorheological fluid clutch of claim 2, but does not specify what type of metal its rotor ring is comprised of. However, it would have been obvious to one having ordinary skill in the art to form the rotor ring of either a ferrous or non-ferrous material. One skilled in the art would recognize the effects of using ferrous metals so close to a magnet on the rotating device. Thus, choosing the type of metal with which to form would be merely a matter of choice of design.

**Claims 1-9, 49-54, and 72** are alternatively rejected under 35 U.S.C. 103(a) as being unpatentable over Moser '177 in view of Monroe '809.

For instance, Moser '177 discloses a fluid clutch and **fan drive assembly (claim 9)** very similar to that of the present application. Its portion of reduced thickness is very thin, but is not formed in the shape of a "W". However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to reduce the thickness of a portion of the rotor, as is known from Moser '177 and form it in the shape of a "W", as is known from Monroe '809, in order to solve the same problem addressed in Moser '177.

### ***Response to Arguments***

Applicant's arguments with respect to claims **1-9, 49-54, and 72** have been considered but are moot in view of the new ground(s) of rejection.

## *Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RYAN DODD whose telephone number is (571)270-1161. The examiner can normally be reached on Monday thru Friday, 9:00A-6:30P, with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Le can be reached on (571)272-7092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ryan Dodd

/DAVID D. LE/
Supervisory Patent Examiner, Art Unit 3655
12/09/2011